

# Customer Segmentation Using KMeans Clustering

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# clustering results

## **Optimal Number of Clusters (Elbow Method):**

- Based on the Elbow Method, 4 clusters were identified as the optimal number, where the WCSS begins to level off.

## **WCSS (Within-cluster Sum of Squares):**

- 261.39
- This value represents the compactness of the clusters; lower values indicate tighter clusters.

## **Davies-Bouldin Index:**

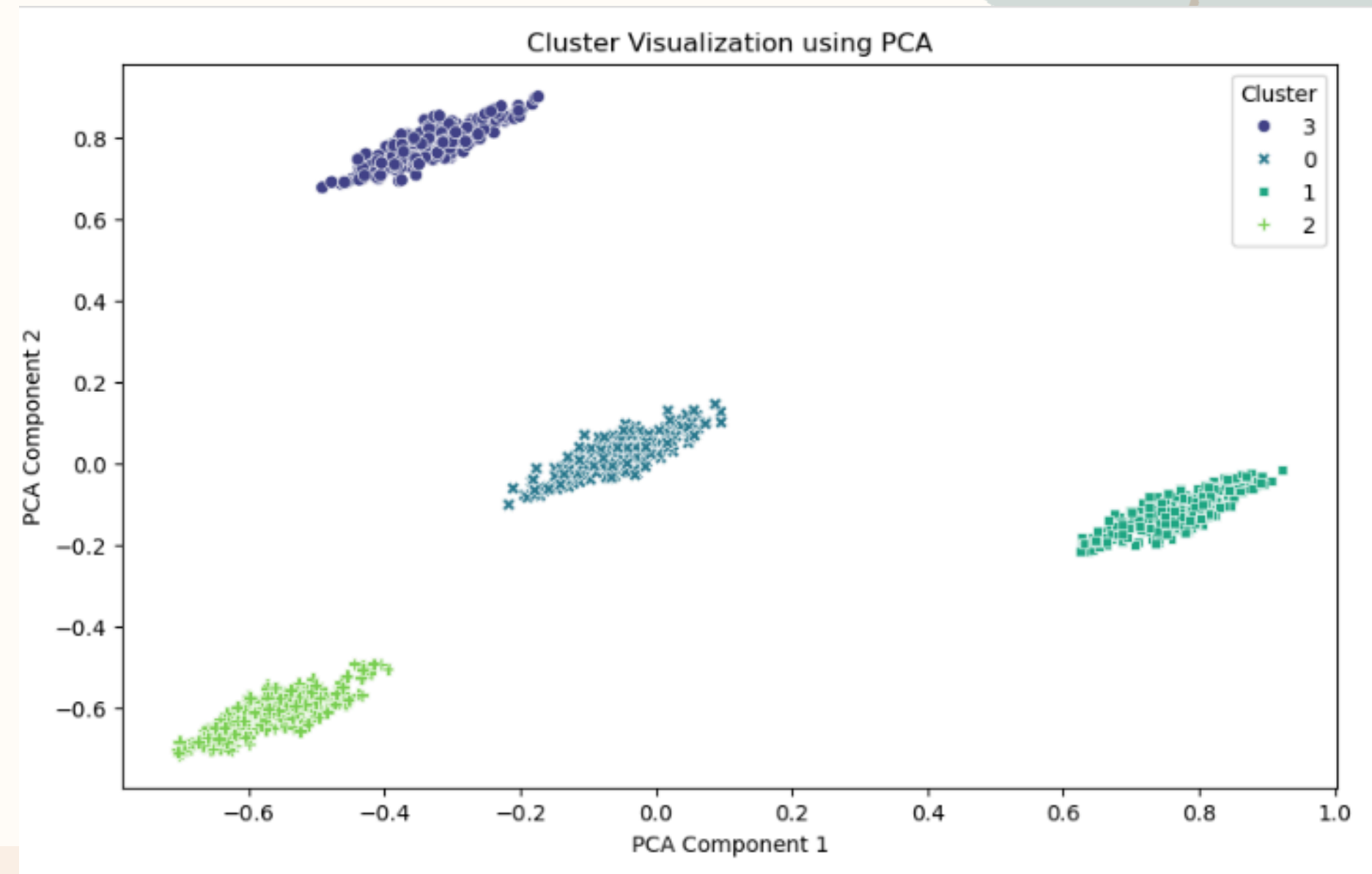
- 0.80
- A lower Davies-Bouldin index suggests better cluster separation and compactness.

## **Silhouette Score:**

- 0.52
- Indicates moderate clustering quality. Higher values represent well-separated clusters.

# Visualise clusters using relevant plots.

- The clusters are well-separated in the PCA-transformed space, indicating that the K-means algorithm has effectively grouped the data into four distinct clusters.
- The clear separation between the clusters suggests that the features used in the clustering process have sufficient discriminative power.
- Each cluster likely represents a unique group of data points with similar characteristics, which can be further analyzed to understand the underlying patterns or trends in the dataset.



# Conclusion

- The clustering results provide valuable insights into customer segmentation, revealing unique groups with similar characteristics.
- These insights can be leveraged to tailor marketing strategies, personalize customer experiences, and improve overall customer satisfaction

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Thankyou